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Observed with a Dollond's refractor, $2\frac{1}{8}$ inches aperture; power 80. The time was taken from the seconds clock in the office-window of the Magnetic Telegraph Company. This clock is controlled from the Liverpool Observatory.

The Transit of Mercury, November 11, 1861, *observed at Grantham.* By J. W. Jeans, Esq.

Lat. 52° 54′ 52″ N. Long. 0° 39′ 0″ W.

Morning fine, but rather hazy; a good many light clouds; wind moderate, and atmosphere very tremulous; vision at times good. The first observation I consider very fair, the last rather uncertain; telescope 5 feet focal length, achromatic, of 4 inches aperture, reduced to 2 inches; power 80. I was rather impressed with the idea that the figure of *Mercury* was not quite round, but slightly elongated, and that there was also a slight ashy light on his eastern limb. At best visions the outline of the planet was sharp, and the impression of ellipticity doubtful; no appearance of atmosphere; clock corrected by transit of δ *Leonis* the same morning, and by Fomalhaut and Markab the previous evening.

	h m s	
First break (pretty good)...	12 42 38·03	Apparent Local Sid. Time.
Last contact (middling) ...	12 44 44·03	

Grantham, December 5, 1851.

Observations of the Transit of Mercury, November 11, 1861. By Joseph Baxendell, Esq.

The following observations were made at Mr. Worthington's Observatory, the instrument used being the equatoreally-mounted achromatic of 5 inches aperture and 70 inches focal length. A power of 126 was first applied; but, owing to the unsteadiness of the atmosphere at so low an altitude, micrometrical measurements of the diameter of *Mercury* were found to be quite impracticable. Two measures of the planet's position on the Sun's disk were taken under a power of 68, but a light cirrous cloud was passing slowly over the Sun at the time, and the images were still very tremulous. The mean result, corrected for refraction and parallax, was as follows:—

At $21^{h}\ 4^{m}\ 10^{s}\cdot2$ G.M.T. App. R.A. of *Mercury* = App. R.A. of Sun − $20^{s}\cdot74$

App. N.P.D. of *Mercury* = App. N.P.D. of Sun − $14'\ 14''\cdot5$

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A few minutes before the end of the transit the cloud passed away, and the definition of the planet and of the Sun's limb improved considerably, and the internal and external contacts were observed very satisfactorily.

		h	m	s	
The internal contact took place at		21	19	8·68	G.M.T.
The external	ditto	21	21	22·80	,,

When the planet was about one-fourth or one-third of its own diameter from the Sun's limb, its form was observed to change slightly; and at the moment of internal contact it was decidedly egg-shaped, the small end of the egg being next to the Sun's limb. The only other feature observed worthy of notice was the excessive *blackness* of the planet, as compared with the nuclei of the spots then visible on the solar disk.

In connexion with the apparent alteration of form of the planet, I may perhaps be allowed to give an extract from my journal, describing a similar appearance observed by my friend Mr. S. W. Williamson, of Cheetham Hill, and myself, on the occasion of the transit of *Mercury* which occurred Nov. 9th, 1848. The telescope employed was an excellent equatoreally-mounted achromatic, of 3¼ inches aperture and 42 inches focal length, belonging to Mr. Williamson, and the image of the Sun was thrown on a screen. This image was very well defined, and exhibited the usual features of the solar surface with great distinctness:—

"At the ingress of the planet a remarkable distortion of its image took place. When the planet had advanced nearly its own diameter on the Sun's disk, the image, instead of immediately assuming a full circular figure, gradually lengthened out on the following side into a pear-like form, until the planet had advanced about one-and-a-half of its own diameter on the Sun's disk, when the projecting part disappeared instantaneously, and the Sun's light closed round the planet, exhibiting it removed a very sensible distance from the limb of the Sun."

As the apparent diameter of *Mercury*, when on the sun's disk, is probably diminished by the effect of irradiation, the alteration of its form, on approaching or leaving the limb, as noticed by some observers, may perhaps be due to the diminished effect of irradiation consequent upon the rapidly diminishing intensity of the Sun's light near the limb, and to the greater susceptibility of some eyes than others to the effects of irradiation; and I may remark that, to my own eye, the degradation of the light of the Sun's disk near the border, whether seen directly through the telescope or projected on a screen, is always very strikingly evident.

Manchester, Dec. 12, 1861.

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